ELEX 290

Camosun College
Audio Effects Processor
USER MANUAL

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1.0 PURPOSE

This Audio Effects Processor unit is simple to setup and use. We are confident that this unit will meet your own exacting standards.

All of the Audio Effect Processor unit's simple vertical menu system accesses all options. This manual describes the setup of the unit and operation of each menu item.

2.0 REQUIRED MATERIALS

1 - 7 V, 200 mA Power adapter (included)
2 - ¼" Mono or Stereo Cables
Required adapters for particular input or output devices
ANY line drive instrument or output devices as input to the unit

3.0 HARDWARE OVERVIEW

Input Device	Any audio source with a LINE output
Output Device	Any audio output device with a line input (i.e. Amplifier)

Control Knob – large knob below the LCD. This is the main input device for the User.

Control Knob Button – asserts when the Control Knob is pushed into the unit

Control Knob Rotation – turning the Control Knob

LCD	The text display screen
Preset Buttons	Four red buttons to allocate particular effects to particular Presets
Power Connector Port	Requires minimum 7V at 200mA power adapter

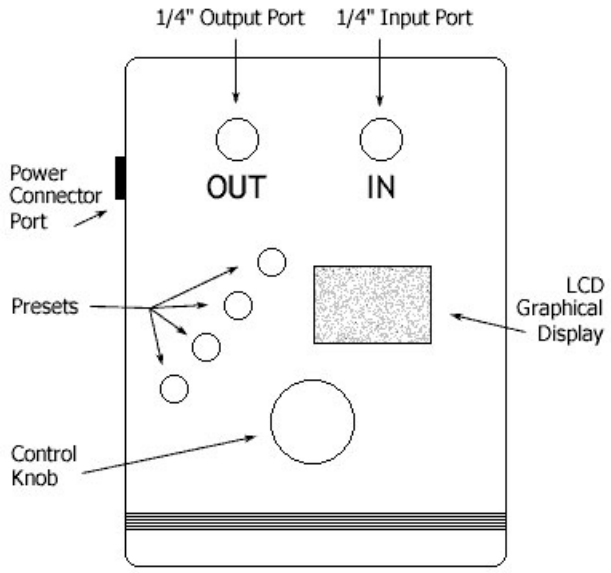

Figure 1: Hardware layout

4.0 USING THE *CAMOSUN COLLEGE AUDIO EFFECTS PROCESSOR*

4.1 SET-UP PROCEDURE

1. Turn OFF your output device and set all output levels to a minimum. Turn OFF your input device and set output levels to mid-scale.

2. Place the *Camosun College Audio Processor* upright with the Control Knob closest to you.

3. Connect the input to your amplifier to the output of the unit.

NOTE: You may require adapters. This unit outputs through a stereo ¼" jack.

4. Turn volume of input audio device mid-scale.

5. Connect any line device to the input of the unit. Again, you could require adapters to connect to the stereo ¼" jack.

6. Plug the power adapter into the unit on the top left side.

7. Turn ON the output device (your amplifier).

8. SLOWLY turn up volume of your output device until you clearly hear the volume at a low level.

CAUTION! If you hear a high pitch squeal, your input device is too close to your output device. You may need to move your input device away from the output device or turn the output device's volume down.

9. Slowly turn up output volume of your input device. Turn volume up until there is any subtle distortion. A maximum input value allows a better resolution of the wet output.

CAUTION! Decrease the volume of the output device as you maximize the input device volume to protect your output device from damage.

10. Set the volume of your Output device to the desired volume.

4.2 MENU SYSTEM

The graphical LCD above the Control Knob displays the entire Menu System. A reversed line designates the currently selected menu item where the line is black and the text is white.

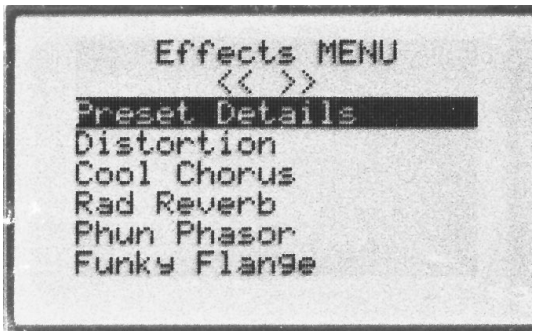

Figure 2: Selection of Preset Details in the Main Menu

Turn the Control knob clockwise to scroll down through the menu items. Turn the Control Knob counter-clockwise to scroll up through the menu items.

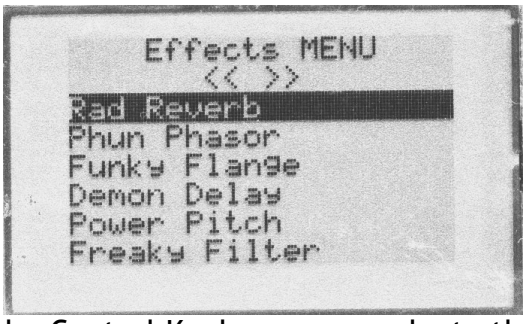

Figure 3: By rotating the Control Knob, you can select other Sub-Menus

Select the Sub-Menu and press the Control Knob Button to view/edit variables associated with that Sub-Menu

4.3 SUB-MENU SYSTEM

Once in a particular sub-menu item, the LCD displays "Exit" and a varied number of variables for that particular effect.

Scroll through the variables using the Control Knob and select the chosen variable.

Press the Control Knob Button to edit that variable.

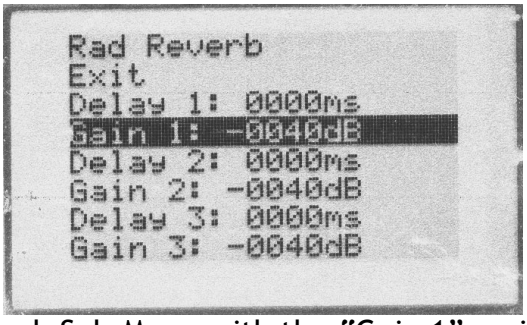

Figure 4: The Rad Reverb Sub-Menu with the "Gain 1" variable selected

Rotate the Control Knob clockwise to increase the value of the selected variable. Rotate the Control Knob counter-clockwise to decrease the value of the selected variable.

Once the variable increases to its maximum value, increasing the variable one more step will loop the variable back to the minimum value. Once the variable decreases to its minimum value, decreasing the variable will loop up to the maximum value.

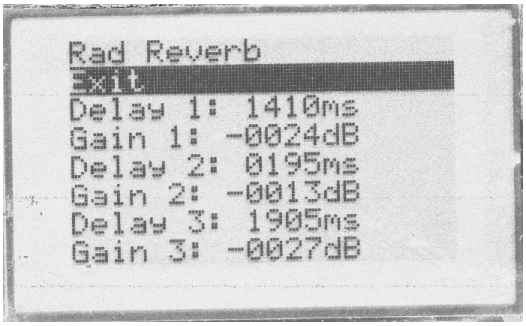

Figure 5: The Rad Reverb Sub-Menu with all variables set and EXIT selected

Once you are satisfied with the current value of the variable, press the Control Knob Button again to scroll through the other variables.

HINT: The *Camosun College Audio Effects Processor* continually updates the sound EVERY number change. Set your variables while listening to your output for full customization.

Once entries are complete, select EXIT and press the Control Knob Button to bring you back to the Main Menu list.

Velocity Controlled Number entry
When editing a particular variable, there is the advantage of Velocity Controlled Number Entry. When rotating the Control Knob quickly, the number will change at a rapid rate. IE Rotation the Control Knob clockwise quickly results in the variable's value to rapidly increase. Slow rotation of the Control Knob results in single step changes.

4.4 QUICK REFERENCE

4.4.1 **Setting a Preset:**

1. Enter the Sub-Menu for the new preset effect.
2. Set all variables.
3. Press the Preset button to associate that effect with that Preset Button. The current output will not change.
4. Return to the Main Menu. Pressing the associated Preset Button changes the current effect to the new Preset.

Note: To change the effect in real time, simply enter the effect that is currently in use, and change the variables.

4.4.2 **Dynamically Setting Variables:**

1. Follow the Set-up procedure.
2. Using the Control Knob, select the particular Sub-Menu in the Main Menu, and press the Control Knob button to enter the Sub-Menu.
3. Scroll to the desired variable, and press the Control Knob Button.
4. Slowly turn the Control Knob. You will hear changes in the sound.

4.4.3 **Sub-Menu Listing**

EFFECT	VARIABLE	DESCRIPTION
Dirty Distortion	Level	Amount signal is distorted
Cool Chorus	Voices	Number of the signal played simultaneously
Rad Reverb	Delay 1	Delay 1 from dry signal
	Gain 1	Gain of Delay 1
	Delay 2	Delay 2 from dry signal
	Gain 2	Gain of Delay 2
	Delay 3	Delay 3 from dry signal
	Gain 3	Gain of Delay 3
Phun Phasor	Frequency	Centre of notch filter
	Gain	Level of the effected signal with respect to original dry signal
Funky Flange	Delay Length	Delay from dry signal
	Frequency	Low frequency variance
Demon Delay	Delay 1	Delay 1 from dry signal
	Gain 1	Gain of Delay 1
	Delay 2	Delay 2 from dry signal
	Gain 2	Gain of Delay 2
	Delay 3	Delay 3 from dry signal
	Gain 3	Gain of Delay 3
Power Pitch	½ Steps	Number of ½ steps This can vary the signal up one octave (+12 ½ steps) or down one octave (-12 ½ steps)
Freaky Filter	Cut-off	Low pass filter on signal with user set cut-off frequency

Gain:
Gain is set using –40dB as the minimum value and 0dB as the maximum value.

Delay and Reverb:
Delays 1-3 go in steps of 15ms
Delay 1 + Delay 2 + Delay 3 must be equal to or less than 3825ms. If the user tries to exceed this limitation, the variables will correct themselves and updates the changes on the screen automatically.

5.0 TROUBLESHOOTING

No sound	Turn ON your input and output devices. Turn your input and output devices to a suitable volume. Connect the Processor to a suitable power source (min 7V 200mA).
Undesired distortion	Turn down input device volume. Check all connections.
Blank LCD screen	Connect the Processor to a suitable power source (min 7V 200mA). Reset Processor by removing power for at least five seconds, and re-apply power.

6.0 CONCLUSION

Simply following the previous instructions allows any musician or listener to quickly initialize and enjoy the *Camosun College Audio Effects Processor*. Take advantage of all the features and capabilities, and embrace the simplicity of the entire system.
Enjoy your Camosun College Audio Effects Processor.

7.0 GLOSSARY

Main Menu	The vertical list of particular options and effects.
Sub-Menu	The options for a particular item in the Main Menu. Sub-Menus are only for items containing options or information.

Audio Terminology

Clip, Clipping	overload, severe distortion
dB (decibel)	a unit of measurement, ratio of two voltages dB = 20log(V1/V2)
Dry Signal	no processing of the input signal
Filter	device or program for adding or removing part of a frequency bandwidth
Line Signal	amplified signal within 100mV peak to peak produced by sound cards, turntables, etc.
Mic (Microphone) Signal	signal within 20mV peak to peak produced by guitars, microphones, etc.
Wet Signal	signal with effects added